

CHANGING PROSPECTS, MISSIONS AND ROLES
FOR CIVIL DEFENSE: 1965-1975

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1. INTRODUCTION AND SUMMARY

During the past few years the study of questions related to civil defense has developed a number of new possibilities for more effective protection relative to expenditures, at various budgetary levels. There have also been important changes in the international and technological environment--changes which have significant implications for proposed civil defense programs. This paper presents in summary form some of the more important of these developments, and discusses their implications for possible civil defense programs.

The current strategic environment is characterized by (1) a reduction of tension between the United States and the Soviet Union, at least insofar as strategic warfare is concerned; (2) a widespread belief that nuclear weapons will not be used; and (3) an increasing bilateral strategic invulnerability, combined with U.S. preponderance. At the same time, analysis of Soviet military behavior suggests a high degree of conservatism and defensive emphasis. As a result of these factors, the threat of a deliberate, planned, large-scale, Soviet attack becomes very small indeed.

Analysis of the kinds of crises that could result in the detonation of nuclear weapons on the United States suggests that the "design case" for civil defense planning should be some form of the following scenario: a very intense crisis, some kind of "strategic warning" of hours, days, or weeks,* and a likelihood of limited counterforce attacks on U.S. allies and/or explicit threats and limited counterforce or limited and "ragged" countervalue attacks on the United States before a large city attack--if any--would be carried out. Considerations surrounding such scenarios are explored in some detail.

The major conclusion for civil defense planning is that small or intrawar attacks, arising out of deep crises, are the easiest and cheapest to prepare against, apparently the least unlikely, and yet among the most neglected of civil defense contingencies. While the possibility of massive surprise attack should not be ignored, the relative overemphasis upon it has hampered realistic planning efforts.

A more realistic allocation of planning emphases leads to increased interest in civil defense and emergency planning programs containing some or all of the following elements:

1. a crisis mobilization base;
2. a tension mobilization base;

*Although it is necessary to use some such term as "strategic warning" or "crisis warning," it is important to be conscious of how treacherous such a term is; whether a signal or event is "warning" depends on many difficult-to-predict factors, especially the perceived costs and value of the response being considered.

3. a post-attack recuperation base;
4. possible arms control and increased defense agreements, including cooperative civil defense; and
5. programs that vary protection with population density to reduce the lucrativeness of population targets.

Strategic and political aspects of such program elements are discussed, and, on balance, they are recommended.

II. THE STRATEGIC ENVIRONMENT

A. The Détente

The widespread belief that--in spite of limited and low-level confrontations--there is a growing détente between the United States and the Soviet Union is the most significant feature of today's strategic environment. As a result of this belief, there is, on the U.S. side, a very strong interest in avoiding the increase of tension--an interest which seems to some large degree likely, for various reasons, to be reciprocated by the Soviet Union and to lead to possibilities for more positive arms control measures. Given these hopes, many would argue that new strategic systems, especially defensive systems, should no longer be developed. Thus, the United States has recently proposed at Geneva to freeze antiballistic missile systems along with delivery systems, and some have argued that certain civil defense programs (e.g. blast shelters and strategic evacuation plans) should also be restricted.

B. "Nuclear Incredulity"

In addition many people find it impossible to believe that nuclear weapons will ever be used. This attitude, called "nuclear incredulity" by Raymond Aron, is based, in part, on a belief that nuclear war is certain to continue to appear so immoral, unmanageable and destructive to every nuclear power as to remain "unthinkable"--or even "impossible." Thus, the less extreme belief that the violence and risks involved in using nuclear weapons are wholly disproportionate to any rational war aims, and the corollary belief that the use of nuclear force (and perhaps any sizable force) to settle issues between the two superpowers is a thing of the past, and now very widely accepted.

Even if these beliefs were valid, they could not be reliably so; and possibilities such as irrational war aims, or nuclear force being used between lesser powers, would remain potential dangers in any case.

C. The Strategic Balance

In contrast to the late 1950's, fears that the Soviets will achieve, or try to achieve, superiority in strategic warfare have now diminished almost to the vanishing point, at least for the next decade. According to official public statements, all U.S. defense programs are expected to operate, after about 1967, in a situation in which we have 1,000 to 1,500 Minute-man missiles and 500 to 700 Polaris missiles. Barring unexpected weaknesses at least for the next few years, these forces will be so close to invulnerable or such unattractive targets that in most war games the Soviet player does not strike at them; to do so would mean a peculiar sort of unilateral disarmament in which he would lose more missiles and relative strength in his attacks on these strategic systems than he would destroy. A Soviet

decision-maker planning an attack on the United States must face the question, "What should I do about the Minutemen and Polaris?" Thus, he may decide either not to attack or to use some form or combination of blackmail, limited strikes, and intra-war deterrence--complex tactics that cannot be of high confidence. For this reason, many believe that the absolute probability of a Soviet attack, even in very tense situations, is very low, and that if an attack occurs it is likely to be quite different from the all-out, "optimized" attacks that have generally been considered in the past.

Thus, because of the survivability and enormous power of the Minuteman and Polaris systems, fears of a Soviet surprise attack, "out of the blue," launched at cities and missiles, whether or not they were ever justified, have now also diminished. Correspondingly, the expectation has increased of having some degree of restraint and control even if a central war occurs.

Both the continuing or enlarging détente and the increasingly stable balance of terror seem likely to strengthen nuclear incredulity. Also, as the U.S. ability to inflict or to threaten overwhelmingly asymmetric damage to the Soviet Union declines,* with it diminishes a possible one-sided U.S. ability to enforce differentially advantageous limits or "rules" in a possible nuclear exchange. Belief in the large-scale utility of major counterforce operations with city avoidance, as part of a damage-limiting effort, or even in any useful degree of asymmetrical control, seems also likely to decline.

D. Some Pertinent Soviet Characteristics

The recent public history of Soviet strategic procurement has supported the claims of some analysts that the Soviet Union is, irrespective of the détente, a much more conservative and defensive society than many had imagined. The Soviet desire seems to have been to possess certain minimum means of terror in order to maintain a deterrent, and yet, unlike minimum deterrence theorists in the West, to develop extensive active and passive defenses (at least up to the ABM era).

Several Russian characteristics seem to have affected the U.S.S.R.'s current strategic posture, and seem likely, to some degree, to continue to play an important role in the future. Soviet behavior has been characterized by such traits as:

1. A preoccupation with World War II, leading to an extensive emphasis on, in effect, refighting that war with modern equipment. This preoccupation may be seen, for example, in procurement of TU-4's and Badgers and the heavy (and probably redundant) deployment of MRBM's and IRBM's--all weapons for the European mission--accompanied by an almost startling neglect of the intercontinental offensive mission.

*Even if U.S. procurement rates remain higher than the Soviets', the asymmetry of the threat will continue to decline, as long as Soviet invulnerability continues to grow.

2. A traditional emphasis on repelling invasion of the Russian homeland--an emphasis which in recent years seems to some extent to have become a preoccupation with defense against air and missile attack, as opposed to land attack.
3. An emphasis (in practice as opposed to theory) on "long" wars. While some Soviet experts have discussed concepts of short wars, their procurement doctrines seem to envisage extended conflict. For example, there seem to be indications of a lack of hardening of strategic forces and of emphasis on refire and mobilization capabilities.
4. A corresponding lack of emphasis on, and concern with, operational capabilities for the first few minutes, hours, or even days, of war--at least as compared with the U.S. emphasis and concern.
5. An apparent emphasis in deployed systems on the workable and practical as opposed to the theoretical and sophisticated. Thus the Soviets designed their Badgers and Bisons with a small number of large jet engines, easily maintainable, but relatively inefficient. Similarly, the fourteen-to-one ratio of fighter kills in Korea resulted in part from a lack of sophisticated fire-control devices. This kind of weakness could occur again--particularly in the measure-countermeasure area.*
6. An emphasis on artillery and artillery-type equipment (such as IRBM's and SAM's) rather than medium and light bombers.
7. A relatively slow and surprisingly incomplete revision of doctrine, probably because of institutional (i.e., political and bureaucratic) factors, as, for example, undue emphasis on the need for all branches of the military to participate in strategic war. This may be due in part to the emphasis on experience and practicality and the absence of intense, systematic, and reasonably expert and independent debate such as is common in United States. (We may note that particularly absent are the independent scientific and policy research organizations which have contributed so much to the development of U.S. foreign and military policies in the last twenty years.)

*The Soviets have been willing to allocate major resources to military capabilities, but they do not seem to demand careful and systematic measure-countermeasure, counter-countermeasure, etc., analysis at least in comparison to usual U.S. practice. In the United States, analysts may go through several generations of measures and countermeasures, always assuming that offense and defense are more or less evenly matched at every stage of the analysis. Such analyses are useful if not taken too seriously, but may be quite misleading as a picture of the real world. In fact, one finds that both in the Soviet-American competition and, more generally, in historical instances of competition in quality, one side or the other tends to be overwhelmingly ahead; closely matched competitors are comparatively rare.

8. A distrust of the political reliability, and possibly ordinary prudence, of junior and perhaps senior military officers--fears which seriously limit peacetime operations, deployment, and training. There seems to be little realistic training of the sort SAC habitually carries out.
9. A preoccupation with secrecy. This, combined with doctrinal inertia, tends to stifle debate and prevent systematic and creative transfer of information up, down, and throughout the bureaucracy.
10. A record and doctrine of extreme caution in war, subwar, and crisis, at least whenever risks become large (illustrated by the kind of "fishing expeditions" and limited-risk enterprises they have undertaken). Consider such Soviet aphorisms as: "Two steps forward, one step back"; "Communism is too important to be thrown away in a fit of anger"; "Don't let the enemy provoke you into self-destructive behavior"; etc. Such precepts, although their predictive value is admittedly uncertain, have no real parallels in U.S. military or political tradition. Thus both the history of Soviet foreign policy and its ideological doctrine suggest that the Soviet Union was, even before the détente, and will continue to be, a conservative adversary. In particular, it has a predilection for using proxies in confrontation situations in order to control and limit the risk of escalation; it is not likely to undertake dangerous "fishing expeditions" (such as the Cuban missile venture) without leaving open a path for retreat; and it is not likely to indulge in self-destructive or obviously contraproductive behavior, even in the most desperate or emotional situations. (Of course, there is always the possibility of failing to recognize the seriousness of risks, e.g., perhaps the Cuban missile crisis.)
11. An instrumental view of war. Unlike the West, the Soviets have almost no tradition that war is romantic or a game, or that lives should be lost on behalf of chivalry or honor. Rather, they seem to be influenced by the Byzantine tradition in which war was waged courageously and competently, but expediently, and in such a manner as to maximize the gains rather than according to a code which could easily lead to self-destructive behavior. In addition, Marxist military doctrine derives much from Clausewitz, who compared war to a settlement or accounting day in which the pay-off of previous investments is calculated. Because of this and their cautious doctrines, it would seem that the Soviets, if they are true to this tradition, are not likely to lose control of themselves and react emotionally or even according to a rigid, preconceived plan, if it were clear that such a plan implied a high risk or so much destruction to the U.S.S.R. that the decision-makers would be "sorry" they had tried it. They seem very likely to evaluate the risk of such "eventual regret" well in advance, and to avoid such risks rather conservatively when alternatives exist.

12. Soviet targeting (or target-threatening) policy is likely to be politically (rather than purely militarily) determined, even in central war. Thus the Soviets are likely to believe that the most likely path to success in almost any competitive enterprise would exploit the "contradictions" in the enemy camp. In particular, they are likely to believe that they have greater resolve, staying power, unity and cohesion than their opponent, and thus, in a sufficiently desperate situation, may be more willing to match resolves than military capabilities--especially in strategic war, for which their military capabilities seem likely to remain inferior. This attitude could lead to an emphasis upon attacking our allies rather than our homeland. If attacks are launched against U.S. territory, they are more likely to be bargaining and political attacks than classical attrition-type counterforce or unreasoning mixed counterforce-countervalue attacks. Least likely seems to be an unthinking, "spasm" attack against all the big cities.
13. An emphasis on massive capabilities. Thus, it is easy to imagine the Soviets procuring at least modest numbers of missiles with very large warheads, and, if practical, procuring large numbers of such missiles.*

This analysis of Soviet behavior, if it is correct, implies that the "standard" scenario--a massive Soviet surprise attack, out of the blue, launched at U.S. forces and almost all large U.S. cities, and employing advanced countermeasures--is extremely unlikely. The comment on countermeasures is particularly important when antiballistic missiles or other defense systems are being considered.

*However, even if the Soviets had 100 or 200 missiles with 100-megaton warheads and decided upon a first strike, they would probably be deterred from launching many missiles at U.S. cities because this would insure a large retaliatory strike against Soviet cities. Nor do these missiles seem especially useful in a counterforce strike (except to some presumably small degree, for anti-BMD purposes). Finally, these missiles would be unlikely to survive a later U.S. strike (or a U.S. first strike). Thus, even though the existence of such Soviet weapons would create anxiety in the United States--and this, of course, would be their primary purpose--it is not likely, even were deterrence to fail, that many would be launched successfully against U.S. cities. In addition, their relatively great expense, unusability, inflexibility, and vulnerability (because of the small numbers and difficulty in hardening or concealing) seem likely to cool even an enthusiastic Soviet artillery officer's desire to procure very many such weapons.

However, a caveat is necessary: even if these characteristics of the Soviets are valid, they may change. For example, Soviet strategic publications show a curious dearth of realistic thinking about the implications of modern war. This neglect may derive from sheer unwillingness to examine a situation which, if better understood, would have seriously damaged the morale of the military and political leaders. The possibility of a more nearly equal strategic capability in the 1970's may now encourage the Soviets to study the issues more carefully. Similarly, the mere passage of events (such as the Cuban missile crisis, in which the Soviet leadership may have been forced to face certain strategic calculations squarely, perhaps for the first time) may stimulate further studies and insights. If the Soviets should devote themselves seriously to the studying of changes in the potential nature of war brought about by nuclear weapons and other new technologies, they may yet display considerable inventiveness and ingenuity in both tactics and strategy--even if they continue to be, as would still be likely, relatively inept in some respects of the technical measure-countermeasure competition.

III. THE CHOICE OF SCENARIO FOR CIVIL DEFENSE PLANNING

We would argue not only from the above but from analysis of escalation generally* that if deterrence failed and general war ensued, it probably would not take the form of the usual "standard case" of a large-scale Soviet surprise attack. Rather, we would hold that the United States could have at least low-to-medium confidence that some of the following conditions would follow:

- (a) Only a small portion, if any, of the Soviet missile force would be directed at population targets in a Soviet first strike. The major portion would be directed at forces, allied territory, or non-city property targets, or withheld for bargaining or later use.
- (b) In case of a U.S. counterforce first strike and a subsequent Soviet second or later strike at U.S. cities, not only would Soviet offensive forces be depleted but they would have been degraded in other important ways (producing so-called "ragged" and badly allocated attacks).
- (c) Because of (a) above, there would probably be a significant period of warning** for most U.S. civilians even in a Soviet first strike; moreover, if the United States deployed even a light cover of ABM, it might be able to intercept deliberate but small or accidental attacks on cities and thus to increase the effective warning time for any larger attacks.
- (d) In the most likely situations, in which the war arose out of an intense crisis (with or without a U.S. first strike), there is a significant chance that there would be enough reliable strategic warning for civilians to carry out major evacuation or other movements and to improvise or improve protection where it did not already exist. (The analysis of defensive population activities should allow for the likelihood of an intense crisis having occurred before the outbreak of the war--a crisis protracted and intense enough to dispel nuclear incredulity and to make likely a correspondingly intense training and education of both decision-makers and population in the realities of nuclear weapons and the available and practical options. Although a series

*See H. Kahn, On Escalation: Metaphors and Scenarios, op. cit.

**This period would be usable only if appropriate preparations had been made, e.g., for evacuation, reception areas, crash programs, etc.; these points will be discussed in reports on Increased Readiness, now in preparation.

of intense crises in which no war occurred for some time could have a "cry wolf!" effect, it is unreasonable to consider primarily those cases of war outbreak in which there is no urban blast shelter program and all or most of the urban population is still in cities.)

- (e) Last and, if very effective programs are being considered, possibly most important of all, since there is a considerable chance that the Soviet Union will not be a very capable opponent in the Soviet missile vs. ABM measure-countermeasure competition, it would be a mistake not to allow fully for this possibility in evaluating ABM and its interaction with CD.

While it may be advisable to continue to study what we now think of as the off-design and improbable but much used "standard case," the general, surprise attack--partly because it is relatively easy to study and otherwise salient, and partly because it sets important bounds--it is unwise to make policy decisions solely or mostly on the basis of such calculations. The results are indicative neither of the likely objective performance of a defense system nor, indeed, necessarily even of the "image" of such a system. At the time of a confrontation either side could be well aware of its own or its opponent's deficiencies, even if these deficiencies cannot be predicted reliably today. Some of this knowledge might also persuasively be communicated to third parties.

Thus, in the decade to come the Soviet desires in the strategic area will probably be to possess a reasonable amount of deliverable terror, to maintain a deterrent, and yet to develop active and passive defenses against a range of eventualities. However, they do not seem likely to pursue a very vigorous or competent central war policy and all the kinds of inadequacies and weaknesses which the United States had in the fifties may be present in the Soviet posture in the sixties and in much or all of the seventies, and not be very disturbing to the Soviet leadership.

In particular, it is hard to overemphasize how unlikely it is that during the next decade the Soviets will have any good reason to believe that a general Soviet counterforce attack would destroy enough of our retaliatory force to "save" Russia, or to give the Soviets any decisive bargaining advantage (though it might deny the United States such a decisive advantage). The above, of course, assumes that current U.S. estimates of its basic invulnerability are valid.

The recent civil defense emphasis on fallout protection, largely in cities, is primarily focused on a kind of attack that now seems to be highly unlikely, though not impossible. Even for attack against missile sites in the U.S. Zone of Interior, the danger of fallout in cities may decrease sharply if weapons become more accurate and have correspondingly lower yields. Also, the counterforce attack for which fallout shelters work best should become less likely as vulnerable targets such as bombers are reduced in importance, and of course, such targets can often be efficiently attacked with air-burst weapons. However, it does not become completely implausible: the Soviets might come to believe a weak link exists

in our deterrent system or might judge a controlled counterforce attack with groundburst weapons to be the least undesirable form of escalation. However, if the Soviets ever become desperate enough to attack the United States, they might judge it more effective to launch a few weapons directly against population and economic targets (rather than large-leverage force targets), more for "demonstration" effects than for narrow military advantages, even though this act would seem far too dangerous in any but the most desperate situations. On the other hand, the probability of the United States' risking massive losses and the destruction of Europe in any calculated counterforce or "bargaining" attack is also likely to be low, even if success seemed assured on paper.

Let us now discuss in more detail a series of illustrative scenarios of interest to civil defense planners. Although we have made some of these points in previous Hudson Institute reports, it seems worthwhile to pause to elaborate the point that for the next decade or so, the "design case" should be some sort of escalation and crisis scenario.

A. The Importance of Crises

We have pointed out that there has been a curious imbalance in American strategic planning in most of the postwar years. On the one hand we find that almost all the attention has been concentrated on the deterring or waging of major thermonuclear wars that start out of the blue, either as a surprise attack on the United States or because of accident or miscalculation. On the other hand, most research analysts believe any thermonuclear war would probably be preceded by a very intense crisis, which has been caused deliberately, inadvertently, or by some mixture of deliberation and inadvertence. Thus, in the late fifties, analysts believed that the balance of terror, with all its fears and uncertainties, was firm enough to make it unlikely that any country would start an all-out general war unless a very intense crisis made it so desperate that war was regarded as less undesirable than any alternatives. The decision-makers were thought more likely to be motivated by the conviction that the peaceful alternatives were bleak than by a hope that the war would turn out well.

However, it is well recognized that, in a very intense crisis, desperation might lead to the initiation of nuclear war. At the same time, during an intense crisis, the danger of inadvertent war may increase. By contrast, in a noncrisis period there are many factors that tend to prevent war. These include preliminary safety precautions and a general unwillingness to take precipitate and irreversible action, even if there were an incident that, in the absence of safety precautions and what we have characterized as "conservative" preferences,* might cause war.

*See A. J. Wiener and H. Kahn, Crises and Arms Control, HI-180-RR (Prepared for ISA), Hudson Institute, Harmon-on-Hudson, N.Y., Oct. 9, 1962, especially pp. 176-180. To be "conservative" in our terms is to prefer, on balance, passive to active behavior, familiar to novel methods, retrenchment to expansion of commitments and activities, defensive to offensive strategy and tactics, status quo-maintaining to interest-advancing goals, loss-minimizing to gain-maximizing options, and reduction of risks and uncertainties to increase of expected utilities.

Nevertheless, until quite recently very little effort and attention has been paid by U.S. military planners to the deterring and waging of the kinds of wars that could arise out of crisis situations. Nor has there been much attention to the range of other military and political actions these crises might necessitate. Probably one important reason for this is that an intense crisis is intrinsically at least partly unique--the problem may be dominated by unpredictable details. Another reason is fear that special preparations for or during a crisis may increase the probability of war. In some cases people wish to bind the hands of the Executive Office by giving the government no choices between Armageddon or collapse, hoping thus, paradoxically, to avoid both. The notion is that if it were known that a decision-maker did not have available flexible military capabilities, the preference for "accommodation" would be increased for one or both sides. (The "left" is inclined to believe it desirable to provide incentive for the President to accommodate; the "right" is inclined to use much the same tactic to pressure the enemy to accommodate--and/or to avoid accommodation by our side.) Yet the contrary may be true and disaster may result. In any case it seems irresponsible to be so unprepared to cope with crises as to have no other options than "holocaust or surrender."

In sum, almost all U.S. analysts would now more or less agree with the following ordering of contexts from most to least likely:

1. Very tense crisis--some kind of inadvertent or accidental war perhaps caused in part by miscalculation.
2. Very tense crisis--U.S. calculated strike.
3. Very tense crisis--S.U. calculated strike.
4. Normal situation--some kind of inadvertent war.
5. Normal situation--S.U. calculated strike.

In the fifties the third possibility would have been put first or second, but the existence of relatively invulnerable U.S. strategic forces has changed the estimate. In any case, if this general point of view is correct (and has been correct for some years), then it is clear that there has been a startling misallocation of emphasis in the past. It is probably a fair estimate that about 90% of professional attention in the fifties was directed to the fifth possibility and about 10% to the fourth. By and large, the first three were almost completely ignored.

This example of past misemphasis is now widely known and is used as an example by analysts. Some of the credit for the recent shift in emphasis to the first three scenarios is due to the use of such methodological devices as scenarios and war games as well as to the increasing experience of the analysts with these problems. These factors all drew attention to the idea that wars that escalate out of crises should be considered the "design case," and the others are "off-design" cases that must be hedged against but which one should guard against overemphasizing.

It is significant that cases that should be emphasized often are not, even by mature and competent analysts. For many years senior analysts, policy makers, and decision makers and their staffs, who had partial or full authority to decide their own ground rules, spent most of their time on problems which, in their own opinion, were relatively unimportant compared to the problems they could have been studying in the same area of responsibility. In this never-never land of preparing for hypothetical and unreal situations, spending one's time on the less important problems rather than on the more important ones not only can happen, it has happened and it is, of course, still happening. What is required is an unflagging effort to perceive ways in which doctrines continue to lag behind realities.

Many of the alternatives opened up by the consideration of more realistic scenarios may seem bizarre at first sight. Yet it is most likely that as a result of having passed through some very intense crisis, senior decision-makers on both sides will have received an intense and concentrated education in military problems and their strategic options (i.e., on what they can and cannot or should and should not do with military forces). It is sometimes argued by psychologists that in such moments of stress there is a narrowing of alternatives and a concentration on small numbers of familiar options. This can clearly happen and we have discussed some aspects of this possibility elsewhere.* But we note here our belief that if the customary alternatives are bleak enough, decision-makers are very likely to look around for new ones and thus find their horizons widened rather than narrowed.** In a government, and in committees especially, a "moment of truth" is as likely to shake and sober all who are looking or have looked into the chasm, as to keep them satisfied with the familiar when the familiar is transparently and starkly inadequate. As Samuel Johnson once said, "Depend upon it, when a man knows he's going to be hanged in a fortnight, it concentrates his mind wonderfully."

B. Some Conceptually Useful Scenarios

We will now consider various archetype scenarios which could be used in an evaluation of a defensive system. We will note here that it is important to utilize whatever special opportunities are presented by such scenarios and to guard against their special dangers. Our assumptions as to the probable outbreaks for nuclear war, discussed above, give these scenarios some special characteristics. We will start by dividing our scenarios into three classes:

Alpha--This class assumes malevolent and largely competent enemies. The Alpha-1 version is the "worst case"--a Soviet Union

*See A. J. Wiener and H. Kahn, Crises and Arms Control, op. cit., especially Chapter V.

**The blockade of shipments of offensive weapons in the Cuban missile crisis may be an example of successful improvisation during a crisis. However, it is interesting that this improvisation might well not have been thought of if the Executive Office had not had such a relatively long and impressured opportunity to plan the U.S. response.

whose only objective is to destroy totally the United States and all of its people and institutions. (Alpha-2 versions, not considered here, would examine "Hitler"-type opponents. These illustrate that in the hands of an aggressive, non-conservative (gambling) opponent, nuclear deterrence strategies may favor the aggressor.)

Beta--These scenarios assume that Soviet decision-makers are motivated by considerations of both Soviet national interests and Communist ideology, including a desire for world domination. Soviet leaders are willing to take great but not overwhelming risks to achieve the latter.

Gamma-- This assumes that, when it comes to the use of central war forces, Soviet decision-makers, while tough and aggressive, are largely motivated by prudential considerations and a conservative though hard-headed view of the Soviet national interest. Thus, they would go to war only if the immediate peaceful alternatives looked even more desperate--that is, in some sort of very intense crisis. As judged by most U.S. analysts, Gamma scenarios are the most likely.

Some Alpha scenarios involve pre-planned, malevolent and secret Soviet attempts to annihilate the United States by a surprise attack out of the blue. These Alpha scenarios are implausible, but they are theoretically important because they represent one kind of maximal hypothetical threat. In almost all Alpha scenarios none but the largest civil defense program could keep the most vulnerable 50% of the U.S. population from being killed immediately. Under all but the most expensive programs (\$50-\$100 billion/annum) the major portion of the economy would be destroyed so that the immediate survivors would face a bleak, if not hopeless, future. Luckily, these Alpha scenarios seem so extreme that one is tempted almost to disregard--at least for civil defense purposes--the possibility of their occurring (i.e., we do not give much weight to the worst of the cases).

The next type, the Beta scenarios, is somewhat less extreme and somewhat less unlikely. In Beta scenarios the Soviets are not willing to go to thermonuclear war merely in order to destroy the United States, but might be willing if it seemed to further their own national or ideological interests--often a very different objective. In some of the Beta scenarios, active and passive defense programs would perform rather badly as insurance for survival. In others, such programs would perform very well. Finally, we will consider the Gamma group of scenarios, in which crises erupt into thermonuclear war.

Let us compare some Alpha, Beta, and Gamma scenarios.

Alpha-1: An Extreme Scenario

1. U.S. maintains an "adequate" retaliatory force.
2. Soviets procure great numbers of large-yield, soft, concentrated (perhaps hidden), unalert missiles.*
3. They set, perhaps years ahead of time, a D day, H hour, M minute, S second.
4. They launch an optimized salvo at the two or three hundred largest U.S. cities, most of which they destroy.
5. They also launch a supplementary area attack at U.S. rural regions, causing immense, perhaps total, damage.
6. The portion of the force allocated to destroy SAC is unable to do its job, however, and SAC launches an all-out retaliatory blow at Soviet society.
7. Their country is either destroyed by this U.S. retaliatory blow or at least an "unacceptable" level of damage is inflicted. Their success in killing U.S. civilians does not affect this result.
8. They are "sorry" that they launched the attack.

While the above Alpha scenario is clearly not a likely situation, neither is it just a straw man to be refuted and forgotten. It is intended to establish the point that our protection today depends, to some extent, on the Soviets' having some combination of competent caution, inhibition, apathy, or technological incompetence. In the future it may depend on other nations (e.g., China) having some combination of these qualities. Thus we must live with the fact that there are Alpha scenarios, perhaps in forms slightly more plausible than Alpha-1, that are not impossible. The problem is that it is so difficult to handle Alpha scenarios in almost any of their forms, even the most reasonable ones, that it is national policy today, and likely to continue to be national policy, to depend upon the assumptions that there is some level of retaliatory damage that the Soviets (or other potential attacker) would not be willing to accept, and at which they would be deterred.

*Such missiles require only one crew (rather than the five required for 24-hour, 7-day-a-week operation) and are much cheaper to base, operate, and maintain. One might expect a factor of two or three in savings in each five years of costs, thus allowing the Soviets to buy two or three times as many missiles for the budget as normal operating procedures would allow.

It is also, currently, part of national policy to have sufficient offensive nuclear forces so that the Soviets are unlikely to procure only, or even many, large-yield, soft, concentrated (perhaps hidden), unalert missiles. These missiles are "provocative" and Soviet leaders need to invest their money elsewhere. The same vulnerability-reducing reasons that induced us to go to small Minuteman, small Polaris, and relatively small Titan II's (compared to what one could have) may induce the Soviets, to a great degree, to do the same. They too must worry about our striking them in some intense crisis (such as the Gamma-1 scenario to be described) and they too must worry about having insurance and being able to stand firm. In addition, using secrecy as a primary defense is not really practical. No nation can depend, by means of security procedures, on the other side's 1) not having a secret agent, 2) not getting access to secret documents, 3) not having a special reconnaissance technique (e.g., U-2 or Samos), and so on. Secrecy is simply too unstable a method of protection to be relied on as a mainstay* by any nation that can afford to pursue some other technique. Therefore, it is most likely that in the long run the Soviets will go in for hardening, dispersal, and perhaps mobility--all of which entail great expense and tend to reduce the efficient size of the missiles. This means that it is unlikely that a U.S. civil defense program will have to deal with an attack by many (more than perhaps a few hundred) large-yield missiles.

As we pointed out above, the Soviets have not shown great interest in central war as compared to their interest in European and smaller wars. One explanation for much of the Soviet strategic posture is that, preoccupied with the German problem, and confident that it is not difficult to deter a U.S. first strike, they have focused most attention on Europe; it is also possible that they are suffering from doctrinal lag and thus have been preparing for a World War II type of war, though with modern equipment. Hence, in the early sixties, hundreds of Soviet IRBM's faced Europe, while only tens of Soviet ICBM's faced the United States. While there are indications, as we have pointed out, that the Soviet military establishment is changing, there is no great reason for believing this change will be dramatic, thorough, or necessarily even very effective; and there is some reason for believing that the Soviets will continue to be plagued by various service and civilian doctrinal lags. While the United States cannot rely completely for a defense on possible Soviet ineptitude or apathy toward central war, it should be prepared to take advantage of such traits, if they persist.

*Secrecy may also be undesirable as a supplement because it tends to accelerate the opponents' efforts (and also the arms race). For example, the current U.S. missile superiority is largely the result of S.U. secrecy, which in turn resulted in overestimation of the Soviet rate of procurement of missiles. Originally, the major Soviet interest in secrecy was more related to privacy than secrecy, but the Soviets have since picked up the probably mistaken notion that it is one of their great national assets. In fact, the Soviets' almost pathological desire for secrecy is probably incompatible in both the short and long run with their own national interests, as well as ours, and it is probably doing all concerned a service to point this out to them. See Max Singer, Military Postures, Effective International Communication, and Arms Control: A Proposal with Two Sets of Goals, HI-237-P, Hudson Institute, Harmon-on-Hudson, N.Y., May 3, 1963.

Let us go on to the Beta scenarios, which are somewhat more reasonable and thus deserve more emphasis:

Beta-1: A Less Extreme Scenario

1. U.S. maintains a retaliatory force it considers adequate.
2. Soviets procure, secretly or openly, a counterforce capability, including ABM and CD.
3. At some point, they launch some sort of optimized attack at U.S. population and SAC.
4. Attack goes well, but their population is hit by a residual SAC and Polaris force which survived the S.U. attack.
5. However, their society survives this attack, while U.S. society never recovers from the war.

Beta-2

1. Same as in Beta-1.
2. Same as in Beta-1.
3. Same as in Beta-1.
4. Attack goes badly from a counterforce point of view, and the Soviets are hit severely by U.S. retaliatory forces.
5. U.S. society is all but destroyed, and the Soviet Union is grievously damaged.
6. The fact that U.S. society is destroyed does not recompense the Soviets for the near destruction of their own society. Even though in some sense the Soviets have "won" the war, the Communist Party does not have the strength and the resources to control the world or even the remnant of their own society.

Beta-3

1. Same as in Beta-1.
2. Same as in Beta-1.

3. At some point, they launch a "counterforce with avoidance"* attack and send a blackmail ultimatum.
4. We reply "counterforce with avoidance" and start bargaining.
5. There is a pause or abatement of hostilities and a period of negotiation.
6. The war is terminated without ever having a large countervalue attack.
7. The terms of the termination agreement reflect the military situation.

The above three Beta scenarios all start with the same steps; and then branch. From the survival point of view, the first scenario is the hardest to deal with, but it is presumably also the least likely. Its probability is low partly because it would be difficult for the Soviets to procure such a large counterforce capability secretly; if they procured such a force openly, we would not be likely to permit it to become large enough, relative to our own force, for it to be able to do a major amount of disarming of our retaliatory force. But equally important, even if they think (possibly wrongly) that they can disarm us, they are not likely to be willing to rely on that belief to the extent of launching a major part of the first wave at the U.S. population, thus making extremely likely a U.S. response that would be at least partly aimed at balancing the civil damage. They would lose little or nothing by waiting to see how effective their counterforce alone would be.

In other words, they would be too concerned by the possibility of a Beta-2 version of the scenario to use Beta-1; therefore, they would most likely pick the Beta-3 version, which they might judge would maximize the U.S. incentive to respond in a controlled manner and which would enable them to respond flexibly to what actually happens on their first strike; Beta-3 is far and away a safer scenario for them to attempt than Beta-1 (from both the S.U. and U.S. points of view). The Beta-3 scenario is, of course, exactly what the controlled response doctrine is designed to deal with. However, as our discussion above indicates, the Soviets are not likely to build a force that would make a Beta-3 attack plausible.

*This is an attack in which, whenever the military penalty is small, the attacker chooses options which minimize collateral damage to civilians and property. As opposed to an "augmented counterforce attack," in which, whenever possible, "bonus" damage to civilians and property is sought, a "counterforce with avoidance" attack on the United States might cause 1-10 million U.S. dead, while an augmented counterforce attack of roughly the same size and same "military results" might cause, without extensive civil defense, 20-100 million dead.

Let us now assume a Beta-3 scenario. In this case, if we have a Partial Damage Limiting Policy* and the Soviets somehow succeed in their counterforce operation, about all the United States can do is sue for peace. While this is not the sort of remark that goes well, it is realistic. After all, the Germans and the Japanese were probably just about as tough as the Americans, and when military events went badly for them, and their forces were destroyed, and their populations were hostages to our forces, which then had the ability to wreak unlimited amounts of harm, they gave up, even though it was "against their religions." It is reasonably clear that we are likely to do the same. If we do not, the Partial Damage Limiting program for survival is not likely to work and the Soviets would presumably simply annihilate the population of the United States.

In the case where they try the Beta-3 scenario, and the attack goes badly, or not as well as they expected, and we have a Partial Damage Limiting policy, about all we can aspire to is to call the war off, perhaps after wreaking some punishment on the Soviets. If our people are vulnerable to later waves of the Soviet attack, we cannot presumably compel any substantially unequal accommodation from the Soviets. All we can expect to do is punish the Soviets, to some degree, for what they have done (presumably accepting retaliatory punishment in return, at least for any civil damage we do beyond what they have done), and then call the war off (although in any real situation many other factors may influence the outcome, besides the forces and defenses on each side). This is one limitation of most Partial Damage Limiting policies.

If we have a larger Damage Limiting program, which would include active and passive defense for the population, then presumably we would be prepared, to some degree, to wage the war and, in addition to surviving, hope either to win it or to gain much more advantageous terms than we would with only a Partial Damage Limiting posture.

Let us now look at some examples of the third set of scenarios. These are of the type we have recommended as a design case:

Gamma-1 and Gamma-2: Standard Crisis Scenarios

1. Crisis in East Germany.
2. High level of internal violence.
3. Intervention by West German "volunteers."
4. S.U. ultimatum to West Germany.
5. Limited evacuations in Western countries.
6. U.S. or NATO reply to Soviets, supporting West Germany (but accompanied by private warnings to the West Germans).
7. S.U. reinforces divisions in East Germany.
8. West German interventions increase, Bonn losing control of enthusiasts eager to intervene in East Germany.

*That is, the policy described by Secretary Robert McNamara in 1964 testimony before Congress.

9. NATO mobilizes against Soviet reinforcements.
10. S.U. ground attack on West German supply lines, other major violence, or nonlethal demonstrations of nuclear force.
11. Exchange of messages.
12. A cessation or abatement in hostilities.
13. "Armistice" is violated.
14. Spontaneous evacuations in U.S. and European cities.
15. S.U. advances against German and other NATO forces.
16. S.U. ultimatum.
17. Soviets attempt to split NATO by nuclear demonstrations against Western Europe.
18. U.S. announcement of open cities; NATO announcement of "open Europe" west of Rhine.
19. Either the U.S. or S.U. sends ultimatum along with a constrained disarming or counterforce-with-avoidance strike.
20. . . .

Almost everybody who tries to write a plausible scenario about the start of World War III tends to focus attention on the German problem, either on Berlin or the East German-West German border. Therefore, we will illustrate the Gamma crisis scenarios by assuming some kind of crisis in East Germany or in Berlin or both, which reaches a high level of violence, but is still internal. This level of violence eventually causes, possibly against West Germany's official objections, intervention by German citizens and/or military. A reasonably high-level engagement then occurs between the East Germans and the West Germans, with Soviet troops possibly involved. At this point the Soviets send an ultimatum that the West Germans must withdraw. It seems likely that the crisis will have reached such an intensity that in many cities around the world some people will start to evacuate. There will probably be a Western reply to the Soviet ultimatum which will express feelings of sympathy for the East Germans, but very likely the Soviet request not to intervene will be heeded. However, it may not be possible, because of "technical problems" or official or unofficial sabotage, defiance or unauthorized behavior, actually to disengage the West Germans from the East Germans. At this point the Soviets could make a punitive ground attack or initiate other major violence, including perhaps a show of nuclear force that only ambiguously crosses the nuclear threshold, e.g., a high-altitude burst that does no physical damage.

For the purpose of our scenario, assume a Soviet ground attack which is moderately successful. There would be another exchange of messages; one could easily imagine at this point a pause or even formal truce. Given the current balance of terror and current attitudes toward thermonuclear

war, it seems highly unlikely that things would not be settled at this point (if they have not been settled earlier). But let us assume, however, that neither side wishes, or is able, to back down. There might then be more evacuations, continued Soviet advances, presumably eventually a U.S. or NATO ultimatum.

We are now at the point where the nuclear war starts. There can be many, many versions. We consider two: In the first, a Gamma-1 version, there is limited Soviet attack against Western Europe. In the second, Gamma-2, there is a U.S. "counterforce with avoidance" strike. Let us discuss each in turn.

If the public statements by various administrative officials are reasonably correct, the Soviets really do not have anything like an overwhelming superiority. In fact, they very likely have a rather pronounced inferiority. Therefore, they are unlikely to initiate counterforce exchanges. But by striking Western Europe, they present American leaders with a serious dilemma and convince most other Western leaders they should opt out immediately. In one sense, what has happened is that the Soviets have called our "bluff." In doing so they have risked an all-out, or "spasm," response by European nuclear forces, and if the war is continued by the U.S. or if they receive a countervalue attack from Europe, they have made a tragic mistake. It may well be the end of the Soviet Union, but they in turn would fire their withheld forces at U.S. and European countervalue targets. Depending on what they have and the state of our active and passive defense, this response could inflict anywhere from 10-100 million U.S. casualties and 100-200 million European casualties. It would set us back economically anywhere from a few years to as much as a century or more.

In order to avoid this last eventuality, we in turn might respond to the Soviet attack on Europe by attacking the Soviets very carefully, avoiding all of their major population and industrial centers--in this case, the Soviets may not have "made a mistake." Depending now on the details of the military events, there would then be some asymmetrical threats available to each side. While the asymmetries might tend on balance to favor the United States, destructive capacities are not likely to be so one-sided as to enable us to have our way completely. A relatively likely occurrence might be an armistice and some kind of settlement. The risk that each country is now running has by this time far outweighed the local issues in Germany and Berlin. At this juncture, the bargaining position of each side will depend in part on the number of hostages each side holds. The nature of the armistice and the outcome of the bargaining will be determined in great part by how we and the Soviets view the capability of our value defense systems against an attack by the remaining Soviet force. This Soviet force would have been reduced well below its original strength by the counterforce attacks that had been launched.

Another possibility is continuing military operations with one side getting decisive superiority. A third possibility is continued military operations which finally erupt into all-out countervalue attacks. If, in the above scenarios, we had entered the war with preparations suitable to a Partial Damage Limiting policy, then our civilians in major cities would have been hostages to whatever residual Soviet forces existed at

any time, since our urban population would, at best, have been in relatively soft shelters, unevacuated, and with little active defense. On the other hand, if we had begun to deploy effective active and passive defenses, then, of course, as Soviet forces decreased in capability, fewer and fewer U.S. cities and populations would be hostages of the Soviets.

Let us now discuss the Gamma-2 variation, in which the U.S. gets into central war by initiating a "counterforce with avoidance" or "constrained disarming"* attack.

Depending on details, this scenario could result in from one to twenty million Soviet deaths, most likely in the lower range. If we have not already done so as part of the previous threat-counterthreat process, it might be wise to send the Soviets a simultaneous message or even to describe in very clear fashion exactly what would happen if they retaliated counter-value. Whether or not we send such a message, we should send them our offer for a peace treaty (which at a minimum will presumably contain a demand that they stop their invasion of Europe and return to the status quo ante). If this attack occurred in the mid-sixties, it is probable that the Soviets would then hold 5 to 20% of the U.S. population as hostages to their surviving force. This is 10 to 40 million people, so they have some substantial bargaining power. It might also be less, particularly if it turns out that various kinds of Soviet weaknesses about which some U.S. strategists have conjectured actually do exist. At this point we have, in a sense, called the Soviet "bluff." We did strike and accept the risk of their spasm attack. Let us assume that the Soviets withhold their attack, either because they cannot fire it, or because they are fearful of the U.S. counter-reply. About all the Soviets could then do is negotiate. Now the asymmetry in threats could be so large (particularly if we had a sound defensive posture) that it would be quite likely that the United States would get its minimum demands and maybe more.

Several characteristics of "Gamma" scenarios have important implications for civil defense. First, there may be several days or even weeks of "strategic warning" during which civil defense preparations might be carried out. In some cases it would not be unreasonable after step 13 (see page 20) (or earlier) to remove most of the civilian hostages from our urban centers. Emptying the cities would hardly be likely to cause the Soviets to pre-empt, because whatever they then targeted, they would gain little and risk everything. One should also note that since the expected attrition of Soviet forces through a U.S. counterforce attack would be considerable--at least for the next few years--this is a more feasible and useful targeting option for us than for them. Finally, it should be noted that although the active Soviet alternatives may look bleak to them, they may feel that inaction is even more dangerous. Thus, if the situation were sufficiently desperate they could still respond in one of the following ways:

*In a "constrained disarming" attack as distinguished from a "counterforce with avoidance" attack, the attacker tries to avoid causing excessive collateral damage to civilians, even if this results in a relatively large decrease in military effectiveness.

Of course, the above does not fit in with current, or at least announced, Soviet doctrine and the relative number of Soviet weapons. The Soviets seem to feel that one of the best ways to fight a war is to attack society. It is difficult to believe that any nation--including the Soviet Union--would go to nuclear war unless they thought it would be short (and to some degree victorious). Long wars are so uncertain that they are unlikely to be deliberately started except out of desperation. Therefore, no matter what their current doctrine, such considerations seem likely to appear very persuasive to Soviet decision-makers before (and if) they launch a first strike. (There is another possible reason for the announced Soviet doctrine. With the present strategic imbalance they can claim nothing else in public. That is, in public they must claim to hold to an irrational strategy for its deterrent value.) In any case, as Secretary McNamara has said:*

Now the foregoing is not to say that we can forecast the nature of a nuclear attack upon the United States. In talking about global nuclear war, the Soviet leaders always say that they would strike at the entire complex of our military power including government and production centers, meaning our cities. If they were to do so, we would, of course, have no alternative but to retaliate in kind. But we have no way of knowing whether they would actually do so. It would certainly be in their interest as well as ours to try to limit the terrible consequences of a nuclear exchange. By building into our forces a flexible capability, we at least eliminate the prospect that we could strike back in only one way, namely, against the entire Soviet target system including their cities. Such a prospect would give the Soviet Union no incentive to withhold attack against our cities in a first strike. We want to give them a better alternative. Whether they would accept it in the crisis of a global nuclear war, no one can say. Considering what is at stake, we believe it is worth the additional effort on our part to have this option.

It is important to note that even if population is not the target for the first wave, it may be the target for the second or later waves. In any case, it is always being threatened. In other words, the residual vulnerability of the civilian hostages may affect, to a great extent, the kind of peace treaty the Soviets can force on us or we can force on them.

For this reason, it may make a good deal of strategic sense to try to protect people from being threatened by second and later wave attacks, even though we have not protected them adequately from a potential first wave. We note that it is easier to protect population from second and later wave attacks than from first-wave strikes out of the blue. (All of the large vulnerable ICBM's and many of the protected ones will probably be either destroyed or already launched at some military target.

*Secretary of Defense Robert S. McNamara, Statement before the House Armed Services Committee, the 1964-68 Defense Program and Fiscal Year Budget, January 30, 1963.

- a. accommodation and withdrawal
- b. reducing the level of violence to conventional war
- c. ultimatums, stalling and temporizing to disrupt NATO resolution
- d. a small "demonstration" attack (city, rural economic target, or forces) against the U.S. and another ultimatum
- e. a large "demonstration" counterforce attack with the purpose of breaking the U.S.'s resolve, equalizing the U.S.'s bargaining advantage, testing and exploiting any weak links, as well as indicating increasing resolve, determination and even recklessness and stupidity
- f. seemingly planless, ragged use of part of force
- g. general launch of most remaining forces in counterforce-counter-value attack--possibly even an all-out "spasm" attack.

The first five of these would allow time to continue civil defense preparations for the rest of the country.

An analogous situation may exist toward the end of the next decade if an aggressive or desperate Nth country threatens the United States directly or indirectly with nuclear attack. Here the postulated attack is much smaller, but a "naked" great power may not be able to take the risk.

To summarize this section: it would appear that small or intra-war attacks, arising out of deep crises, are among the easiest and cheapest to prepare against, apparently among the most likely, and yet among the most neglected of civil defense contingencies. We recommend, therefore, that the emphasis be shifted and that these contingencies be treated as the "design case" for civil defense and emergency planning.

C. Importance and Implications of Controlled Response Strategy

As indicated by the Beta-3 and Gamma scenarios, under current U.S. controlled response doctrine, an enormous incentive is given to the Soviets, if they attack the United States, to avoid attacking our cities on their first wave--whether this wave is the first or second strike of the war. Even if they feel that they could probably take out much or all of our strategic forces, they could not be certain of it. Therefore, it makes a great deal of sense for them to think of the U.S. cities as hostages which can be used to protect their own cities from being struck by our retaliatory blow. If their first wave goes astray and hits cities, we are likely to respond with a large countervalue attack. Then, unless their strike has been extraordinarily good, they are likely to be destroyed as a nation, or at least be set back 25 to 100 years. This means they lose little (except possibly for a "race to recover") by sparing cities on their first wave and they may gain a great deal.

Others must be withheld for bargaining and intra-war deterrence purposes. Furthermore, there is more time for protective action.) If the U.S. population is not adequately protected against second and later wave attacks aimed at them, in order to protect them we might have to make additional concessions on the peace treaty.

The distinction between being threatened on the first wave and on later waves of the attack deserves emphasis because two kinds of misunderstanding of this point are widespread: some people are not really familiar with the strong arguments as to why the Soviets might avoid U.S. cities on their first wave, and others seem not to understand why it is important to be able to protect U.S. cities from later wave attacks. Although protecting from later waves is likely to be a much easier job than protecting from earlier ones, this job is still of primary importance. Not protecting adequately could increase U.S. casualties and/or decrease U. S. capability to resist postattack blackmail and thus reduce both our deterrence of deliberate Soviet attack and our ability to achieve a "satisfactory" political and military result if deterrence fails.

D. "Ragged" Attacks

Much of the discussion of the plausibility of various scenarios is based on purely "objective" criteria which might be equally true for either the Soviet Union or the United States. It is important to stress several reasons why the Soviets in particular are not likely to make a large, well-planned (out of the blue) surprise attack against cities.

First, the Soviets and their Russian predecessors have had a long history of doing quite badly in the initial periods of a war. In fact, one cannot find an example in the last century or two of situations in which the Russians did extremely well in the initial period of a war; yet there are more than a dozen in which they did badly. We have already argued that it is unlikely that any nation would plan a thermo-nuclear war today, even if under great stress, unless it felt it could win that war within a matter of minutes, hours, or at most, days. But Soviet and Russian past "bad luck" may have created a "complex" regarding this possibility. If this is so, then the Soviets are not likely to be willing to rely on any calculations, simply because of this historical experience--of which they seem to be quite aware.

In addition, if we examine the likely strategic balance between the United States and the Soviets, we note that the United States is likely to have many more missiles at separate aiming points than the Soviets will have ready missiles (not to mention the Polaris submarines and airborne bombers). In other words, unless the Soviets are planning on using some peculiar weapons effects or developing some tactics or capabilities which we have not yet planned for (and it is probably wise to note that this is not necessarily impossible), then, at least in the design case, no Soviet commander could conceive that he can destroy the

United States' strategic capability in a reliable fashion. This implies that he should feel that whatever damage he does to the United States may be done in turn to the Soviet Union, or much more.

There are, of course, some U.S. analysts who have argued that there would be an American revulsion at the thought of killing innocent citizens, even in retaliation for a nuclear attack, and that this might prevent a launching of such an attack even after we had been struck. This seems most unlikely, and the Soviets are hardly likely to be willing to rely on this happening, although they may have no better theory of how to "win."

If there have been several counterforce exchanges and if the United States has the kind of superiority that analysts usually assign to it, then it seems quite clear that Soviet strategic forces will have suffered severe damage very early in the war and before there has been a massive attack against U.S. cities. If then these cities are fired upon at all, it would be by the residual forces.

It is impossible for the Soviet Union to determine ahead of time the composition of these residual forces and it is almost equally impossible, prewar, to write an efficient war plan to be used by such forces, except in broad outlines. The details cannot be spelled out until one knows which forces have survived and in what conditions, and what the target system will be like. Of course, very flexible forces can quickly be targeted or retargeted after the war has begun and thus launched with some effectiveness against our defense. But in the smoke and uncertainty of battle, with part or most of the command and control systems knocked out, and with the degradation that will inevitably occur, partly as a result of weapons effects and partly just with time, the probability is overwhelming that the Soviet attack at that point will be to some degree "ragged."

How ragged it will be is very hard to predict in advance, but again it seems clear that planners should consider seriously some of the many situations in which the attacks are very ragged. It is also important to note that the smaller the Soviet attacks are, the more likely they are to be ragged, since they are likely to be small presumably, in part, because of great damage, and the greater damage itself makes more difficult control, coordination and high performance generally.

Finally, even if the Soviets decide to attack U.S. cities with their residual force, they are still not certain, or even likely, to attack with all of their residual force. As we have argued, there do not seem to be any nihilistic or romantic streaks in Soviet decision-makers that would dominate them at this juncture. Such a spasm response is so much an act of despair and hopelessness as to be almost completely foreign to the character we associate with Soviet decision-makers (as opposed, for example, to Tsarist Russians). We believe that the probability is high that the Soviet decision-maker would save some portion of his force for

final bargaining or postwar deterrence. Or the attack might be only those forces threatened by U.S. bombers on "clean-up" missions (or other counterforce attacks perceived as imminent). Thus, even a "final" city attack might use only a portion of the residual force. The other portion would be withheld with a threat to launch another, perhaps larger, attack if the opponent responds or over-responds.

E. Suggestions for "Design-Case" Scenarios

While it would unquestionably be desirable for civil defense programs to have some effectiveness for "worst case" scenarios, it is far more desirable and feasible that civil defense programs have more likely scenarios as the "design cases." We have argued that the scenarios that are most important for civil defense planning purposes, in the light of our present understanding of the Soviet Union and the politico-strategic situation, are of the "Gamma" type, involving intense crises, some kind of strategic warning, possibly limited counterforce or limited countervalue attacks on the United States at later stages.

Thus, the civil defense planner should take seriously the possibility of a Soviet attack after Soviet weapons inventories and capabilities have been reduced considerably, either by our counterforce operations or their own "useless" firing. He should also take seriously the possibility of improvised or emergency actions taken during the days of severe crisis, and possibly continuing even after nuclear weapons have been used. But even if the Soviet threat becomes degraded, if the United States is not properly prepared in terms of civil defense to exploit these possibilities, and if the U.S. population remains vulnerable to later "ragged" attacks of this kind, our leaders would either 1) have to make unwarranted concessions in the armistice conditions halting the war, or 2) have to risk (or endure) the death of millions of Americans who might have been protected relatively easily.

IV. NEW DEVELOPMENTS IN CIVIL DEFENSE AND EMERGENCY PLANNING*

In view of the preceding discussion, it would be most useful to single out for mention those new ideas in the civil defense area that most directly affect present or future programs for a variety of budgetary levels and future political-military contexts. These suggestions include: a) improvements in the concept of blast shelter protection; b) the possibility of buying a quick-reacting crisis civil defense capability; c) the concept of a "post-tension mobilization base" for rapid civil defense development; d) the special kind of contribution to long-term recovery that a postattack recuperation base can make; e) a more sophisticated and limited evaluation of the role civil defense can play in extended deterrence and in protecting the NATO alliance; f) a more sophisticated analysis of the interactions and contributions of defense systems and arms control, including the possible role of cooperative civil defense programs; and g) an analysis of some political aspects of these suggestions for civil defense programs.

A. Blast Shelter Protection

Although general blast shelter protection seems to many to be undesirable in the present détente, interest in it should be revived for several reasons. First, it would appear that although the lack of a good Soviet counterforce capability makes any attack less likely, a city attack or mixed attack may be as likely as a counterforce attack. This suggests that if one can reallocate new or old funds without increasing the likelihood of an attack, one can buy greater total protection for the money by spending more on protecting the more lucrative targets--i.e., urban citizens.

Second, system designs have been developed recently which rationalize and improve blast shelter program effectiveness by using shelters of varying hardness to limit the casualties that any one enemy bomb can cause. Each enemy weapon is then limited by system design to a maximum number of blast fatalities, no matter what its point of impact. In one typical design (where a 1-MT weapon might be limited to 10,000 blast fatalities) this is done through varying the psi ratings of shelters for most urban areas from 10 to 300. Central New York City and a few other congested areas are considered as special cases and for these a partial local dispersion of people to prepared suburban blast shelters is one possible solution. In

*Under P.L. 920 and Executive Order 10,952, postattack recovery is not included within the authority of the OCD but remains the responsibility of OEP. Civil defense, however, can and should be designed to alleviate the recovery task. In this paper, we are evaluating civil defense programs on the basis of their potential contributions to long-term recovery, as well as by other criteria.

this case, the program relies on having a few hours of effective warning in order to achieve maximum protection. With this posture, during a prolonged crisis the essential activities of even these few cities may be maintained by workers commuting from the shelters.*

In addition, studies have also suggested that great savings can be effected through modifying present OCD assumptions on requirements for shelter space per person protected. The potential increased occupancy has been based on: 1) analysis and comparison with other "bearable" crowded situations; 2) reorganization of shelter space; 3) improved management of environmental factors other than square footage; 4) consideration of the alternatives with budget limitations; and 5) the need for providing interim protection during the early phases of a more extensive program. Also, recent intense discussion of projected active defense systems has led to the comparison on cost-effectiveness grounds of blast shelters and ABM, as well as to a consideration of the possible optimum mixture of these two systems.

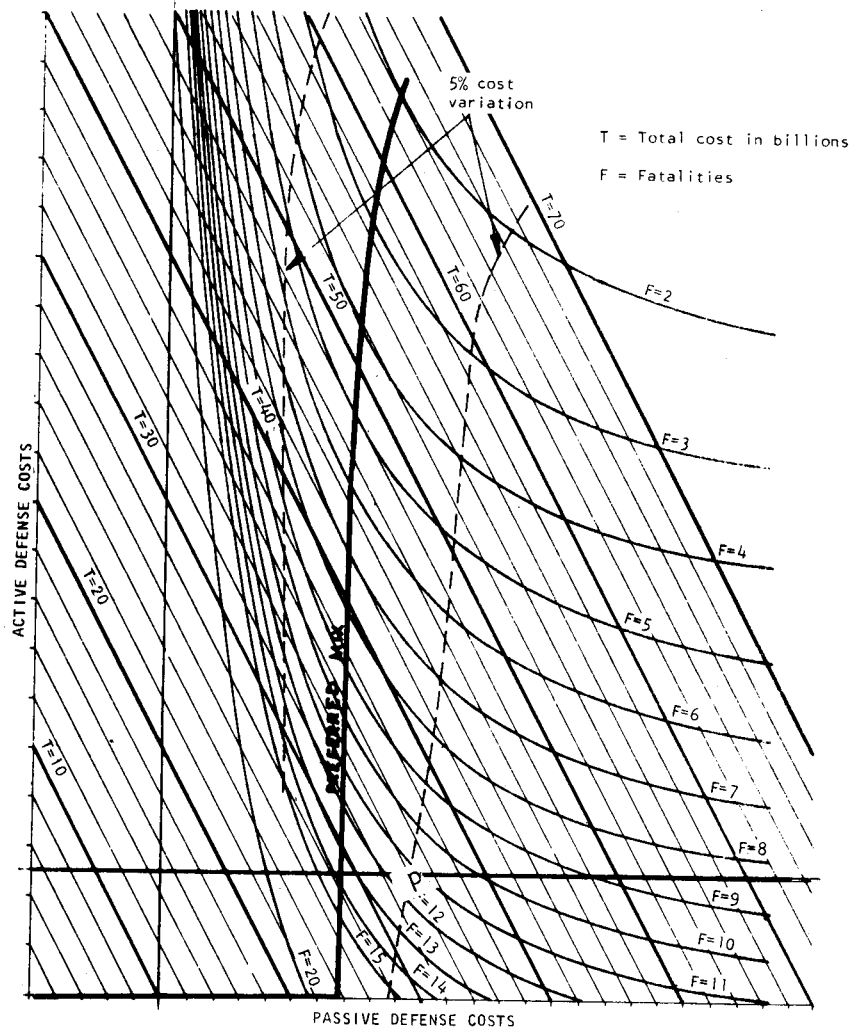
It now seems quite clear that with substantial programs (in excess of \$15-20 billion) an optimum defense would be a mix consisting of fallout shelters in rural areas and both blast shelters and active defenses for the urban areas.** For smaller programs (less than \$15 billion) it becomes difficult to justify much expenditure on ABM systems deployment (without assigning a relatively high ratio of the value of property to value of people), although about \$1-3 billion out of a \$15 billion total might be a good investment against the possibility of unsophisticated attacks and for providing a capability for rapid future expansion. However, cost-effectiveness calculations, based primarily upon civilian fatalities, typically indicate that all of the funds available for defense should be allocated for civil defense, up to a critical amount, beyond which most of the funds should be spent for active defense. The critical amount is related to a number of choices in deployment, system costs, and the nature of the attacks the system is optimized against. One "typical" result is shown in the graph on the following page, which assumes a 5,000 MT urban threat.***

*For a more detailed technical discussion see William M. Brown, The Design and Performance of "Optimum" Blast Shelter Programs, HI-361-RR/2, Harmon-on-Hudson, N.Y., Hudson Institute, June 11, 1964.

**Use of evacuation to distant fallout shelter is being specifically excluded in this section.

***The graph has, of course, underlying assumptions about the cost-effectiveness of the defense components and nature of the attack which are beyond the scope of this paper. For more details, see William M. Brown, Annex II: "A Model For Active-Passive Defense," in Some Approaches To Damage-Limiting Studies, Part II, HI-459-RR/II (prepared for DDR&E), Hudson Institute, Harmon-on-Hudson, N.Y. November 20, 1964.

COMPLETE COST-EFFECTIVENESS CONTOUR DIAGRAM WITH PREFERRED PROGRAMS



In conclusion, it can be argued that blast and fallout shelter programs can be designed which solve all of the most important problems up to the questions of recovery and recuperation from very large attacks. That is, the solution to the technical problems of most of the population's surviving the immediate effects of even large malevolent attacks (up to, say, 10,000 MT) seems to be feasible with high confidence through "optimized" protective designs, at costs that would allow continued reduction of the per cent of GNP devoted to defense.*

The potential recovery and long-term recuperation from moderate or large malevolent attacks, however, are currently believed to be of medium and low confidence, respectively. Although it is expected that this estimate can be raised to high and medium confidence through intensive research and expensive programs, at present this expectation has not been put to the test of thorough study. Perhaps the greatest immediate potential for solving these problems

*Although these "solutions" make one appreciate that protecting population against the immediate effects of a 10,000 MT attack on it may not be the hardest part of the problem.

is by the addition of active defense systems, which can aid recovery from a central war in at least four important ways: 1) protecting property, 2) increasing the raggedness of attacks, 3) reducing the total of megatonnage delivered, and 4) reducing the proportion of weapons that are groundburst.

B. Crisis Civil Defense Preparations

If budgets remain low, however, OCD should spend much of its effort developing and maintaining a capability to utilize the few days, weeks, or months the country may have to increase protection as a severe crisis builds up. Crisis civil defense preparations should include some mixture of paper plans for evacuation; training of relevant persons (for example, those concerned with emergency control of food and transportation); the development or improvement of fallout shelters, especially outside of major urban areas; and work on mobilization bases for significant blast shelter programs. If well directed and supplied, most of the new shelters required for the evacuated citizenry may be constructed, under many weather conditions, by the evacuees themselves. (Frozen ground in northern winters would require special supplies, of course.) The fact that public fallout shelters are an accepted, if not fully budgeted, part of national policy should facilitate the development of a powerful core of rural shelters and shelter managers that can be extremely useful in a crisis.*

A critical hurdle for the development in peacetime of crisis programs involving evacuation is the requirement for the relevant officials to understand the following points:

- 1) Currently discussed evacuation concepts are not based on the idea of "outrunning the missile," but rather on the important possibility that the development of crises and wars would give sufficient "strategic warning."
- 2) Prevention of evacuee "panic" is manageable, as some recent experiences with hurricanes and other situations with comparable warning times have indicated. (Even if panic or confusion does develop in some areas, the over-all gains are likely to outweigh the losses considerably.)

* Two years ago a Hudson Institute study for OCD estimated that with appropriate plans, proper motivation, and good leadership, American resources are sufficient that in two days' time it should be possible "to develop more civil defense capability during this time than has been obtained during the fifteen years following World War II." (See William Brown, et al., Strategic and Tactical Aspects of Civil Defense, with Special Emphasis on Crisis Programs, HI-160-RR, January 7, 1964, Chapter IV, p. 7.) That estimate does not seem to need revision because of the civil defense capability that has been added in the last two years.

- 3) For many reasons, the Russians are unlikely to have, or be able to use, enough weapons so effectively to blanket great rural areas with blast, fire or sufficient fallout, to overcome the improvised shelters to such an extent as to present an important decrease in casualties.
- 4) Analysis, based on current studies of the Soviet threat, as well as of the American economy and of comparable historical situations, indicates that for most of the central war possibilities which can be termed likely in the next decade, the country would be able to recover from the damage in a meaningful way, in a reasonable time, and to a reasonable standard.
- 5) Although a government decision to rely in future extreme crises on evacuation as the principal passive defense protection against blast damage to the population is most compatible with a relatively forceful attitude about how the U.S. should behave in extreme crises (or with an unwillingness to spend even relatively small amounts of money on preparations for other kinds of protection), in the event that such a crisis should occur with no other preparations having been made, public cooperation with emergency evacuation measures would be a humane and patriotic action unconnected with either bellicosity or cowardliness.

One crisis evacuation measure which might save as many as 20-30 million Americans has been described as "medium city evacuation."^{*} Aside from the twelve largest metropolitan areas and those areas without an adequate close-in reception area, about one hundred cities may be evacuated in less than ten hours to a close "ring" area containing reception fallout shelters (including, in the cheaper programs, crisis-prepared shelters). These rings might include communities 15 to 50 miles from the urban center. These distances would make it possible for many persons to commute back to city jobs during part of the intra-war or crisis period. Aside from being simply a useful concept for saving citizens, medium-city evacuation would fall easily into a program initially providing blast protection for the largest cities, without requiring such a program.

C. The Tension Mobilization Base

Currently the reduced planning and discussion^{**} in the central war area is probably related to the low levels of tension among the great powers. But as history has illustrated, tensions can build up again rapidly. And with such tensions there may develop a sudden demand for a civil defense

^{*}See Max Singer, Phasing of Crisis Civil Defense Programs, HI-330-D, Hudson Institute, Harmon-on-Hudson, N.Y., February 14, 1964.

^{**}The United States is still adding about one missile per day to its forces.

capability that normally would take several years to procure. It should be clear that one of the chief responsibilities of the OCD should be the development of an operational plan to reduce sharply the usual lead time required for obtaining an improved posture, once the money to do so becomes available. Indeed, such plans are needed for a number of alternative postures. A complete urban blast shelter posture would normally require a long lead time (several years), but combined with other programs it may be possible to develop a "stockpile" of plans, experimental shelters, supplies, siting analysis, and contractor experience that would make possible very rapid construction. (E. g., if proper plans, preparations, and motivation existed, it might be possible to spend effectively \$20 billion on a shelter program within a year.* Suggestions for mass-producing blast shelters should be solicited and studied seriously, and the more feasible concepts should be explored.

A "prototype" of this kind of mobilization occurred when Congress was debating whether the Fiscal 1950 defense budget should be \$14, \$15 or \$16 billion. Then the North Koreans marched into South Korea, and Congress authorized \$60 billion for that year. A comparable increase in the defense budget could be made again if the Soviets caused international relations to deteriorate seriously. If this occurred, a large portion of the increase might well be authorized for civil protection.

A mobilization base for both active and passive defenses should contribute to deterrence of the Soviets. (They have been considerably strained economically by their reaction to our defense budget increases since 1950 and should wish to avoid a repetition.) It would also alleviate the consequences if deterrence against provocation failed. Thus the likely speed with which a significant defense capability could be deployed could prove an important consideration were the present détente to be replaced by a climate of extreme tension.

D. Postattack Recuperation Base**

Although the public fallout shelter program has been generally accepted, there are objections to new strategic systems based on fears of the arms race and of building tension. These objections may seem to preclude any large civil defense efforts beyond fallout protection. It may be possible, however, to preserve the current arms control and détente atmosphere while developing an important related and alternative capability through a program of national supply management.

*The U.S. construction industry currently has a capacity of more than \$100 billion a year. Unlike most military or industrial suppliers, it is readily deployable if advanced plans have been made. Of course, time-consuming preparations, such as land-acquisition, must be done in advance (or by-passed in the crisis). Land could be acquired on a contingent basis, for example.

**While postattack recuperation is not included in the civil defense task, the considerations here are sufficiently closely related to be worthy of inclusion in this paper. See footnote, p. 29.

It is widely recognized that in the initial postattack environment there would be much more gross production capacity than production because of organizational problems and bottlenecks in critical parts and materials. The men and machines that fabricated these articles may be destroyed together with the warehoused stocks. It is important to determine what post-attack supplies may be in widest demand and shortest supply either regionally or nationally; the most important items could then be stockpiled in dispersed locations. (The medical profession, for example, has successfully advanced a program for widely dispersed hospital and medical supplies.) Such stockpiling would not reduce the number of direct casualties the Russians hold hostage to their weapons, but might increase greatly the ability of the survivors to recover. It would give the country a better "theory of survival," as well as help fulfil current federal responsibilities to these potential survivors.

Stockpiling is usually an expensive option which is frequently beset by problems of deterioration, maintenance, and obsolescence. To a great extent these drawbacks can be overcome by judicious employment of the above concepts of crisis preparations and post-tension mobilization. That is, during relatively peaceful times, plans and preparations might consist mostly of thinking through and organizing a system for what would need to be done if international relations deteriorated seriously. Thus, were we catapulted into an aggressive and hostile new situation, we might not only wish to budget, say, \$20 billion on shelters but a similar or greater amount on recovery stockpiles and methods of protecting property. Were time not available to accomplish this because of a very rapid development of crisis intensity and central war threats, then even under desperate conditions where only a few weeks might be available, emergency measures for improving recuperation prospects are possible which enlist the cooperation of all available citizens. These would of course be phased in with emergency survival measures.

E. Extended Deterrence

Most participants in the debate will agree that it is unlikely--given current technology and attitudes--that the civil defense programs currently being considered in the United States will affect the course of international events in the next decade or so. Especially if the Soviet-American détente continues, but to some degree even if it does not, the nuclear forces of the United States and the Soviet Union have established a pattern of international relations that the deployment of the suggested civil defense systems would not be likely to affect (at least in a direct or massive way), except in crises or in improbable conditions (with the possible important exception of Nth country problems, as noted below).

Moreover, procurement of even moderately large civil defense is unlikely to have an appreciable effect in increasing the credibility of "extended deterrence" of Soviet provocations--at least as usually calculated. Estimated totals of tens of million American deaths, under some kinds of attacks, even with considerable civil defense, are so large as to suggest that except

possibly for the most extreme (and unlikely) provocations a U.S. strategic guarantee of anything more than its own zone of interior might collapse if resolutely tested*--though such "resolute testing" might be somewhat better deterred with a large civil defense program. Nor is the possibility of extra millions of deaths if the United States does not procure civil defense likely to give the Soviets a useful amount of increased assurance.

If "standard" case calculations are accepted at face value, it does not seem true, as many have argued, that in an intense crisis the Soviets might pre-empt out of fear of attack by the United States if considerable civil defense had been procured, and not do so in the absence of civil defense. The argument seems faulty, among other reasons, because the Soviets are unlikely to feel that the U.S. president would rely on civil defense to reduce casualties and other damage to an "acceptable" amount; even if the Soviets should feel great pressure from the United States, so long as the United States continues to maintain numerical and qualitative offensive superiority and relative invulnerability, the Soviets would find initiating a nuclear war a most bleak alternative--less attractive than almost any other possibility. For the same reason it does not seem plausible that a Soviet civil defense system would affect greatly the chance that the U.S.S.R. would strike us.

Furthermore, even if civil defense deployment might be expected to be important in some future stark confrontation, in a détente such a change in the potential credibility of U.S. extended deterrence would probably be ignored. Similarly, even a relatively weak and defenseless United States would be unlikely to "tempt" a deliberate, serious Soviet challenge, and today an unintended challenge seems unlikely--although perhaps likely enough to justify procurement of weapons and defenses.

The major future alterations in the present international power balance are likely to come elsewhere--particularly in the cohesion of the U.S. alliance system and of the Warsaw Pact.** It seems unlikely, however, that the deployment of extensive active and passive defenses in either the Soviet Union or the United States would appreciably affect the "trust" or commitment of allies otherwise motivated to mistrust or challenge U.S. or Soviet leadership. But as discussed below, subtle but possibly important political and psychological benefits could accrue to the United States from ABM and blast shelter deployment, both in dealing with allies and with potential enemies.

We should not underestimate the usefulness of the uncertainties--for an important though marginal case--which could be created by U.S. defense systems. Strategic analysis is relatively simple when the vulnerability

*See Edmund Stillman, Herman Kahn and Anthony J. Wiener, Alternatives for European Defense in the Next Decade, HI-383-RR (Rev.), Hudson Institute, Harmon-on-Hudson, N.Y., August 2, 1964, especially pp. 12-19.

**See Alternatives for European Defense in the Next Decade, op. cit.

of the United States' population and property is simple, stark, and undeniable. Once substantial defenses are procured, calculations could depend, at the minimum, on classified and other information, most of which European or Soviet analysts could not obtain reliably. Nor could these--or any--analysts predict reliably the attitude of the American president and his advisors toward their defenses. It might well be that, over important periods, "objective" extended deterrence--a real capacity to punish, with relative impunity, provocations less than attacks on the U.S. zone of interior--would exist (and we or the Soviets might know this). At the least, a more or less persuasive facade for such deterrence should exist.

There are a number of roles which either a facade or a potentially objective capability could play. The strategic arguments underlying U.S. protection of its NATO allies by first-strike threats would gain enormously in plausibility if the United States were to depend not only on intra-war deterrence, but on some possibility of physically defending its population--as contrasted with the present situation in which some Europeans argue that controlled response and "no cities" doctrines protect U.S. and Soviet cities, but increase the likelihood of European cities becoming targets for attack. U.S. civil defense would not only provide Europeans concerned with tightening alliance links with the U.S. with a badly-needed and (within limits) plausible argument, but would strengthen the various controlled response arguments as a whole, and would supply an important independent source of credibility for extended deterrence.

Even if U.S. active and passive defense were primarily a facade and our guarantee to our Allies still depended in fact upon intra-war deterrence or sheer bluff, still the guarantee would be somewhat more persuasive with some civil defense than with none. U.S. leadership could then be justified by any of the following having sufficient belief in the U.S. defense system working (even if the true situation were difficult to ascertain): Soviet leaders, U.S. leaders, or European leaders (the last because such belief might give them sufficient confidence to make them stand firm in a crisis).

We recognize, of course, that many European arguments relating to credibility are largely rhetorical (but potentially important); they are usually introduced into discussions because they are a convenient cover for deeper and more important motivations. But the fact that a public debate on the credibility of U.S. protection of its allies is carried out in these terms at all is of some political significance. And many Europeans who take a long view of the conflict with the Soviet Union are anxious to use the lull furnished by the détente to improve the deterrence situation. In a crisis this goal might be infeasible, however strongly desired.

If the United States entered into a confrontation with the Soviets, civil defense could be important in making the U.S. leaders somewhat more secure, knowing that the issues were not so stark. The U.S. bargainer might be able to point out to his opponent that he felt relatively certain of important offensive asymmetries and of some minimum levels of protection. For a desperate but illuminating example, consider an extreme case in which the Soviet Union might face a maximum of 90% casualties and the U.S. 50%.

The asymmetry could create an important bargaining margin in establishing that most of the U.S. population was almost certain to survive a nuclear war and that the survival of the United States as a strong nation was more likely. In addition, there would always be a possibility that the United States would get off with relatively light damage--particularly since it could expect its intra-war deterrence to work. Such estimates could reasonably be expected to affect an opponent if the issues became stark, and could have important effects on negotiation and escalation in less extreme situations. For the more likely bargaining situation, in the early and mid-seventies, civil defense could make U.S. strategic superiority even more effective.

These advantages, we have stressed, are not so large as to threaten stability or accelerate the arms race in normal times, but they are large enough to be worth noting, especially for possibilities such as nuclear blackmail in intense crises. For example, if NATO were put to the test by a threat to Europe that could not be met conventionally (e.g., a nuclear threat), civil defense could make an important difference in bargaining positions.

F. Arms Control and Civil Defense

Although there are those who believe that under certain circumstances defensive systems could reduce the risks of initiating nuclear war so much as to turn leaders away from the goals of arms control and disarmament, some of the goals of civil defense are basically very similar to the goals of arms control--to reduce the probability or the destructiveness of war, and if possible, both. Thus in a political environment in which both civil defense and arms control meet much opposition, it is useful to consider strategic approaches which can utilize the advantages of both approaches to damage reduction.

1. Arms Control and Defense

One interesting possibility is a policy we have described as "Arms Control and Defense."^{*} This policy attempts to make possible the actual defense of the country in the event of a nuclear war, without increasing the danger of an arms race in peacetime, by substantially reducing the nuclear weapons inventories of the great powers, and by simultaneously procuring extensive active and passive defenses. The two objectives support one another, for the offensive weapons reductions may make the defensive procurements politically and economically acceptable in a détente world, while the improved defenses reduce inspection requirements for arms control agreements by reducing the marginal advantages of cheating.

^{*}See, e.g., R. D. Gastil, "Comments on Strategic Alternatives and Arms Control and Defense," in Some Approaches to Damage-Limiting Studies, Part II, HI-459-RR/11, (prepared for DDR&E), Hudson Institute, Harmon-on-Hudson, N.Y., Nov. 20, 1964.

In a world in which Arms Control and Defense agreements had been made, nations would still be deterred by the threat of nuclear war, but they would also be deterred by the knowledge that they are dealing with opponents who need not be terrorized into timidity by the thought of war. Finally, the smaller nations which otherwise could compete with the superpowers in delivering weapons onto largely undefended cities, would find it much more difficult, economically and technologically, to put themselves in a position to threaten (or deter) the superpowers (except for comparatively small, "suitcase bomb" attacks). Thus part of the incentive for nuclear proliferation would be removed.

2. Cooperative Civil Defense

Another of the mutually reinforcing possibilities for civil defense and arms control is cooperative civil defense.* In a détente in which the primary strategic problems of the superpowers may become, at least in public, the prevention of the dangers of nuclear use through accident or by Nth countries, a cooperative civil defense agreement (implicit or explicit) embracing the United States, its closer allies, and the Soviet Union might be acceptable. By this means, the civil defense efforts of all concerned nations would be more likely to be perceived as prudential and humane, and would be more difficult to perceive in terms of strategic or war-supporting goals. (The advantages of the extended deterrence in crises, spoken of above, would remain for the superpowers against Nth countries, though not so much against each other.)

Agreements to cooperate (not to limit) in the civil defense area would be in the national interest for at least the following reasons:

1. There would be less vocal internal opposition to a more comprehensive program, including elements of blast and CBR protection.
2. The Soviet program is believed to be well advanced--we would expect to gain at least as much information as we give out.
3. Protecting citizens of either side makes possible a cleaner counterforce option for the other side's forces in the event of war. (This may be an advantage for either or both sides.)
4. Such an agreement would provide experience in working together for U.S. and Soviet officials--experience that should be transferable to other areas.

*The proposal is discussed in more detail in Donald G. Brennan, ed., Arms Control and Civil Defense, HI-216-RR (prepared for ACDA), Hudson Institute, Harmon-on-Hudson, N.Y., December 2, 1963, especially Chapter VII.

5. Projected force balances show we have little to fear from a Soviet counterforce attack, or other attack; in the new decade, no matter how good Soviet ABM-CD programs might be within realistic limits, nuclear war would result in unacceptable destruction to the Soviet Union.

In sum, an agreement to cooperate in civil defense development should be a positive arms control measure, by symbolizing the common interest in protecting citizens, by reducing the potential destructiveness of weapons to populations, and by separating civilian and military targets.

G. Political Problems

Analysis of the domestic political controversy which flared up around the civil defense program of 1961 indicated that civil defense programs for the most part do not (and need not) have socio-political effects that are adverse from the point of view of arms control.* Opposition came from a very small (though prestigious and potentially influential) segment of the population, according to public opinion data, and was expressed primarily in terms of arguments that were also intrinsically arguments against deterrence. (There were also many arguments to show that civil defense was part of deterrence, rather than insurance. These led in turn to the anti-deterrence arguments.) If the extended deterrence considerations discussed above play a salient role in procuring new programs, opposition from this segment of opinion will probably continue, although most people will probably understand and favor an increased capacity to deter crises.

However, the Arms Control and Defense and cooperative civil defense programs that are suggested here as alternatives would be difficult for almost anyone to perceive as anything but prudential, if properly presented. The mobilization bases would not require anxiety-provoking actions and decisions from individuals and local communities. The equal-casualty or equal-risk (rather than equal-protection-factor or equal-expenditure) principle of the blast shelter program should not be too difficult to clarify, at least for the opinion leaders, who in turn tend to shape the attitudes of the more passive and less sophisticated majority.

The arguments in terms of extended deterrence cut both ways: there are those who opposed CD in 1961 because they did not consider "mere insurance" worth the premium, preferring to rely entirely on deterrence provided by strategic weapons; and there are those, as indicated, to whom deterrence (especially extended deterrence) seems provocative and arms-race tending, or who fear U.S. civil defense would impair the present stability of deterrence--that is, they fear it would weaken the Soviet capacity to deter the U.S. from striking first.

*See Anthony J. Wiener, Arms Control and Civil Defense: The Domestic Political Interactions, HI-216-RR/IV (prepared for ACDA), Hudson Institute, Harmon-on-Hudson, N.Y., August 20, 1963.

Both types of objection could be greatly reduced from 1961 levels. The programs discussed in this paper consist primarily of mobilization bases and cooperative measures, aimed at crisis scenarios, and in a context of mutual strategic invulnerability and détente. The opposition from those who opposed CD as "not worth the money" should be reduced, since from a cost-effectiveness point of view, both mobilization bases and design cases that are not "worst cases" appear to be much better investments than either large programs designed against massive attacks, or small programs that do not appear able to handle massive attacks. (Not only is it much easier to provide for both survival and recuperation from smaller attacks, but mobilization bases cost relatively little unless they are actually put to use.)

In addition, these programs may have strategic significance for the kinds of crises we are considering. While this significance should be sufficient to recommend the programs from the point of view of increased crisis assurance, the programs are not significant in the ordinary situation, and should have no adverse impact on the détente or the arms race. To be sure, there may be some slight decrease in decision-makers' unwillingness to cross the nuclear threshold, in some very intense crisis, as a result of these programs; but over-all safety would nevertheless be improved, since this effect would be more than compensated for by the increased capability to deter the crisis itself, and the decreased loss of life if deterrence did fail. While these points may be too complex to be communicated easily to the public at large, they should be within the scope of the journalists and educators who in turn will influence public attitudes towards acceptance or rejection. With care, it should be possible for these points to be consistently well understood and well explained in official statements.*

*For additional suggestions and a discussion of a Federalized, professionalized, and reorganized program, see A.J. Wiener, Strengthening Civil Defense and Emergency Planning for New Requirements and Opportunities, HI-487-RR (prepared for DDR&E), Hudson Institute, Harmon-on-Hudson, N.Y., February 12, 1965.

V. CONCLUSION: THE PLACE OF CIVIL DEFENSE IN OVER-ALL NATIONAL POLICY

The present strategic and political situation should make many previous opponents of civil defense less concerned with the effect of civil defense programs on the "balance of terror." As we have pointed out, present and prospective weapons balances are such that Soviet surprise attack or even pre-emption would make almost no sense, regardless of U.S. civil defense measures. And almost symmetrically, in the absence of any but the most elaborate and improbable active defense, Soviet ability to strike and damage seriously 50-100 of our cities cannot be precluded by a U.S. first counterforce strike in the next decade.

Civil defense can still play two roles: 1) as insurance; as one aspect of the government's acceptance of its civic and moral responsibility to defend the people against disasters, whatever their cause; 2) as a strategic element; in severe crises a civil defense capability aids the resolve of decision-makers facing the pressure of aggressive, reckless or foolish opponents. This last may increase stability not only by increasing extended deterrence, but for psychological reasons; a leader who is able to measure what is at risk and perceive its limits may be less likely to panic, to lose control, to bluff unreasonably, or to let others unreasonably tempt or pressure him than one who visualizes nuclear war as the end of his society and cannot examine or discuss alternatives for fear of a catastrophic loss of will or morale.

Arms limitations and disarmament are quite consistent with civil defense, for both attempt to reduce the level of destruction of wars. But while the United States may gain through symmetrical or parallel offensive weapon reduction, we would not be as likely to gain through symmetrical or parallel CD limitations. Indeed, the opposite is more likely to be true. Soviet CD will not threaten us in the next decade (unless, perhaps, it were combined with surprisingly effective ABM capabilities and surprisingly increased offense capabilities). There may be then a sound basis for U.S.-S.U. cooperation, but not control or limitation, in civil defense. We also judge that were the United States more effectively provided with civil defense capabilities, inspection requirements for future arms control agreements would be reduced and comprehensive arms control would be made more feasible and therefore more likely--for a well-defended country is not so vulnerable if an agreement is violated. Indeed, as we have indicated, there are reasons to believe that civil defense can be most useful when combined with arms control, and perhaps even vice versa.

For the reasons given above, we believe the capabilities most appropriately added to the current posture, in a détente, are active and passive defense. In addition, such capabilities can buy much more damage-limiting potential than comparable funds for offensive weapons, up to rather large budgets.

But as has often been pointed out, civil defense needs steady support from the Executive Office if it is to achieve even modest goals for protecting the population. If a substantially larger civil defense program than

the current one were effectively supported by the President, the Secretary of Defense and the Department of the Army--not as a response to new dangers, but as insurance and as a further rationalization of our strategic defense posture toward a more balanced and stable international situation--then civil defense programs could provide, over a period of years, a reasonable degree of protection for the country.

Finally, and perhaps most important, it is clear that there are never absolute guarantees of security. One cannot properly judge a program by asking, "Is it guaranteed to work?" A more useful criterion is the standard implied in such questions as, "Under what circumstances does the program do useful things?" "Are these circumstances sufficiently likely and are the results useful enough to justify the various costs and disutilities of the program?" Therefore, whether one argues for civil defense on purely prudential grounds, or on general military and foreign policy grounds, it is necessary to consider a wide variety of possible threats.

On balance, applying these criteria, we are inclined to believe that programs including some or all of the following elements should now be seriously considered: a) a crisis mobilization base; b) a tension mobilization base; c) a postattack recuperation base; d) arms control and increased defense agreements, including cooperative civil defense; and, e) blast shelters of varying hardness, to equalize protection for targets of varying population density, against counter-population attacks or against city attacks. We believe that such programs would very likely be of significant effectiveness, in case of war, against a large range of probable Soviet weapon systems and tactics and that they would have some peacetime value in deterring crises and supporting foreign policy. Their advantages, while not immense, seem to be real, and the disutilities comparatively slight. The costs would be low compared to cut-backs that are in prospect for the defense budget, and neither the domestic nor the international political difficulties seem excessive in comparison with the benefits that may be obtained.

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